Abstract Submitted
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Driven translocation of Polymer through a nanopore: effect of heterogeneous flexibility[1] RAMESH ADHIKARI, ANIKET BHATTACHARYA, University of Central Florida — We have studied translocation of a model bead-spring polymer through a nanopore whose building blocks consist of alternate stiff and flexible segments and variable elastic bond potentials. For the case of uniform spring potential translocation of a symmetric periodic stiff-flexible chain of contour length N and segment length m (mod(N,2m)=0), we find that the end-to-end distance and the mean first passage time (MFPT) have weak dependence on the length m. The characteristic periodic pattern of the waiting time distribution captures the stiff and flexible segments of the chain with stiff segments taking longer time to translocate. But when we vary both the elastic bond energy, and the bending energy, as well as the length of stiff/flexible segments, we discover novel patterns in the waiting time distribution which brings out structural information of the building blocks of the translocating chain.

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